

# Selective Mutism: A Three-Tiered Approach to Prevention and Intervention

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Selective mutism is a rare anxiety disorder that prevents a child from speaking at school or other community settings, and can be detrimental to a child's social development. School psychologists can play an important role in the prevention and treatment of selective mutism. As an advocate for students, school psychologists can work with teachers, parent caregivers, speech pathologists, and other support staff toward helping children who may develop or have selective mutism. The purpose of this article is to present school-based prevention and intervention approaches within a three-tiered approach that may reduce the incidence and severity of selective mutism. We present theories and research on the etiology and prevalence of the disorder, followed by a review of intervention methods and research at each tier. Based on the theoretical and research literature base, we conclude that early intervention may result in the prevention and amelioration of many occurrences of selective mutism.

**KEYWORDS:** Selective Mutism, Childhood Anxiety Disorders, Social Phobia, Prevention, Treatment

The purpose of this article is to present school-based prevention and intervention approaches within a three-tiered approach that may reduce the prevalence and severity of selective mutism. Children with selective mutism (SM) experience a "consistent failure to speak in specific social situations (in which there is an expectation for speaking, e.g., at school) despite speaking in other situations" (American Psychiatric Association [APA], 2000, p. 78). To be diagnosed with SM, a child's lack of speech: a) must last for at least one month, excluding the first month of school; b) must interfere with educational or occupational achievement or with social communication; c) cannot be due to any lack of knowledge or discomfort with the spoken language; and d) cannot solely be due to a communication disorder, pervasive developmental disorder, schizophrenia, or any other psychotic disorder (APA, 2000).

Selective mutism is widely characterized as a disorder primarily linked with social anxiety (Bergman, Piacentini, & McCracken, 2002; Chavira, Shipon-Blum, Hitchcock, Cohan, & Stein, 2007; Ford, Sladeczek, Carlson, & Kratochwill, 1998; Kratochwill, 1981; Stone, Kratochwill, Sladeczek, & Serlin, 2002). SM often can be confused with other speech issues, such as the silent period some children experience when learning a second language, the absence of speech due to aphasia or deafness, or the absence of speech sometimes associated with autism (Cline & Baldwin, 2004). The primary characteristic that differentiates this disorder from related conditions is that children who experience SM usually speak freely in other environments, and their failure to speak usually occurs at school (Leonard & Dow, 1995).

Not speaking in school may hinder a child's academic performance and social development in particular, although more research needs to be conducted on the short and long term negative consequences of SM. Not surprisingly, the short-term effects have been found to include heightened anxiety and social skills deficits (e.g., Bergman, et al., 2002; Cunningham, McColm, & Boyle, 2006; Ford, et al., 1998). The long-term effects of SM have been infrequently studied, with two well-controlled studies indicat-

ing that the majority of cases remitted without intervention, however young adults with former selective mutism described themselves as less independent and having more social problems than controls (Remschmidt, Poller, Herpetz-Dahlmann, Hennighausen, & Gutenbrunner, 2001; Steinhausen, Wachter, Laimbock, & Metzke, 2006). Furthermore, many cases of SM persist if not treated (Crundwell, 2006; Ford, et al. 1998; Stone, et al., 2002), which indicates the need for intervention. Interventions with SM are especially important in elementary schools, because the majority of cases are first identified in pre-school or kindergarten (Leonard & Dow, 1995; Stone, et al, 2002). School psychologists can play an important role in implementing prevention at the universal level, and providing more focused interventions for children who may be at-risk for SM.

In this article, we present interventions for SM, following a three-tiered approach (see Table 1). The first tier, or primary prevention, focuses on prevention methods that may be implemented school-wide to reduce the development of SM. The second tier, or early onset interventions, involves interventions that can be implemented with groups or in the classroom for children showing signs of SM. The third tier focuses on individual treatment methods implemented both in and outside the classroom for children who have developed the disorder.

**Table 1**      *Three Tiered Interventions for Selective Mutism*

Tiers	Examples of Intervention Methods
Tier I	<ul style="list-style-type: none"> <li>• Parent/Caregiver newsletters and trainings on the identification and prevention of potential anxiety problems</li> <li>• School-wide oral communication strategies: Maintaining expectancies for speaking, providing opportunities to respond, wait-time for responses, minimizing reinforcement of nonverbal communication</li> <li>• Preparation of preschoolers and families for the transition to kindergarten</li> </ul>
Tier II	<ul style="list-style-type: none"> <li>• Early identification of children who are at-risk for or have selective mutism</li> <li>• Child-focused oral communication strategies: Maintaining expectancies for speaking, providing opportunities to respond, wait-time for responses, minimize reinforcement of nonverbal communication</li> <li>• Contingency management</li> <li>• Shaping</li> <li>• Group therapy</li> </ul>
Tier III	<ul style="list-style-type: none"> <li>• Family and play therapy</li> <li>• Contingency management</li> <li>• Shaping</li> <li>• Social skills training</li> <li>• Stimulus fading</li> <li>• Systematic desensitization/relaxation training</li> <li>• Self-modeling</li> <li>• Psychopharmacological therapy</li> </ul>

## CONCEPTUALIZATION AND ETIOLOGY OF SELECTIVE MUTISM

A disorder like SM was first described in the late 1800s by Adolf Kussmaul, who called the disorder *aphasia voluntaria*, which stemmed from the interpretation that the disorder involved a voluntary decision not to speak (Cohan, Chavira, & Stein, 2006; Krysanski, 2003; Standart & Le Couteur, 2003). In the early 1930s, the disorder was referred to as *elective mutism* which came to be called *selective mutism* in the 1970s and 80s (Krysanski, 2003), the term that is used in the most current version of the DSM (APA, 2000). The change in terminology reflects an emphasis on a child's "consistent failure" to speak in select environments. This emphasis represents an adjustment in the criteria for SM from former definitions which described the disorder as a "refusal to speak." The word "refusal" was changed because it indicated that children with the disorder simply were being oppositional or defiant in choosing not to speak (Cline & Baldwin, 2004).

Early theories on the causes of SM often focused on the family and experiences with trauma, such as a hostile home environment, physical or sexual abuse, or tragic events such as the death of a loved one (Leonard & Dow, 1995). Although trauma may still be believed to be the cause for some cases of SM, there is limited evidence to support this theory. Psychodynamic theorists often conceptualize SM as a child's reaction to an unresolved conflict with parents or caregivers to gain control over some aspect of the child's life (Krysanski, 2003). Similarly, family systems theorists often view SM as a product of conflicting familial relationships (Anstendig, 1998). Behaviorists typically view SM as a result of negatively reinforced learning patterns that teach the child to use silence as a method of reducing or controlling their anxiety in reaction to specific stimuli (Krysanski, 2003).

Selective mutism is most commonly found to be co-morbid with social anxiety. The majority of the research and literature base over the past 30 years supports this relationship (Bergman, et al., 2002; Chavira et al., 2007; Ford, et al., 1998; Kratochwill, 1981; Leonard & Dow, 1995; Krysanski, 2003; Manassis, et al., 2007; Morris & Kratochwill, 1985; Standart & Couteur, 2003; Steinhausen, et al., 2006; Yeganeh, Beidel, & Turner, 2006). Researchers have found that the majority of children diagnosed with SM also matched the criteria for social phobia (Black & Udhe, 1995; Dummit, et al., 1997, as cited in Chavira, et al. 2007; Yeganeh, et al., 2006), a specific type of social anxiety that includes "a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others" (APA, 2000, p.456).

Bergman et al. (2002) surveyed 125 teachers who reported on 2256 kindergarten through second grade students and found that children diagnosed with SM were rated higher on levels of internalizing, withdrawn, and anxious/depressed characteristics than comparison children. Steinhausen et al. (2006) focused on personality traits in a longitudinal study on 33 children with SM and matched controls. After 13 years of study, they concluded that "...SM and child anxiety disorders share similarities in their temperamental, environmental and biological etiologies, and that SM also co-occurs with various specific anxiety disorders such as social phobia, separation anxiety, and posttraumatic stress disorder" (p. 754). Temperamental characteristics that correlate with anxiety, and those that are prevalent in children with SM, include shyness and behavioral inhibition, or a slow-to-warm temperament (Cline & Baldwin, 2004; Ford, et al., 1998). Although there is a clear link between SM and anxiety, more research needs to be conducted to determine the factors involved.

Familial factors also may play a role in SM, although the research is mixed. For example, Chavira et al. (2007) found generalized social phobia occurred in 37% of a sample of 140 parents/caregivers with children diagnosed with SM, versus 14.1% of 62 control group parents/caregivers. Similarly, Schwartz, Freedy, and Sheridan (2006) surveyed the parents/caregivers of 33 children with SM and found that "33% reported a relative with social anxiety disorder and 12.1% reported a relative with SM" (p. 46). These findings indicated that a genetic component, or indirect familial factor, may influence the development of SM, although the results also indicated that most of the parents/caregivers under study did not evidence anxiety or social withdrawal. Cunningham, McHolm, Boyle, and Patel (2004) conducted a study that compared 52 children with SM and their families to a control group and found no differences between the groups on measures of family functioning.

Some researchers have posited that a biological factor may be related to shyness (Kagan, 1997; Marshall & Stevenson-Hinde, 2001), which occurs in many, but not all, children with SM. In a review of 100 cases of SM, 85% of children with SM were rated as shy (Steinhausen & Juzi, 1996), although this finding probably is an overestimate due to the 'shy-like' behaviors associated with SM. A biological correlate for shyness may be indicative of a related biological factor for SM but the data are not strong and are in need of further empirical research, such as twin and adoption studies to examine genetic and biological influences.

### **Incidence, Prevalence, and Demographics**

There is a limited amount of research on the prevalence (the proportion of the population with a disorder) of SM, and virtually nothing is known about the incidence (rate of new occurrences) of the disorder. SM typically is estimated to occur in less than one percent of the population (APA, 2000), although the DSM refers only to "individuals seen in mental health settings" (p.126). Some prevalence data have indicated that approximately seven per 1000 children are affected in the United States (Bergman, et al., 2002) and Israel (Elizur & Perednik, 2003). Due to relatively low prevalence, it is difficult to conduct large controlled studies to ascertain accurate estimates (Krysanski, 2003; Leonard & Dow, 1995; Standart & Couteur, 2003). Establishing accurate incidence and prevalence rates is hampered by the different levels of severity and common misdiagnoses of children with SM. The apparent prevalence rate also could increase in areas with higher immigrant populations (Cline & Baldwin, 2004). Thus, the prevalence estimates may change with more awareness of the disorder and more accurate diagnosis.

Research on the demographics of SM has mainly focused on sex and age. The majority of the data indicate that SM is more prevalent in females than in males, with the ratio ranging from 1.6–3:1 (Kolvin & Fundudis, 1981; Krysanski, 2003; Leonard and Dow, 1995; Standart & Couteur, 2003). The higher prevalence of SM in females builds another potential link between SM and anxiety disorders, which are also more often diagnosed in females (Leonard & Dow, 1995). The variation in the data on sex ratios likely is due to the limited amount of sample sizes and inability to control for the selection of participants with SM. The onset of SM appears to range from three to six years of age, with a majority of referrals occurring during the first years of school (Cohan, et al., 2006; Leonard & Dow, 1995).

Children from immigrant backgrounds have been found to be more likely than non-immigrant children to be diagnosed with SM (Elizur & Perednik, 2003; Steinhausen & Juzi, 1996; Toppelberg, Tabor, Coggins, Lum, & Burger, 2005). These findings likely are due to misdiagnoses. Studies on the prevalence of SM within diverse samples can be difficult to control, due to the overlap of characteristics between SM and what is known as 'the silent period' for English language learners. Children from immigrant backgrounds may be more prone to be misdiagnosed with SM if they are experiencing an initial nonverbal stage before becoming comfortable speaking the language of their adopted country (Toppelberg, et al., 2005). More research is warranted on children from immigrant backgrounds, with a focus on differentiating children who have SM and those who are experiencing a silent period. Related variables that warrant further investigation are cultural influences that may contribute to the diagnosis, or lack thereof, of SM. Virtually nothing is known about the incidence or prevalence of SM across different races/ethnicities or the cultural variables that may influence the rate of occurrence or diagnosis. Cross-cultural research has shown that SM occurs in different countries (e.g., Elizur & Perednik, 2003; Remschmidt, et al., 2001). Overall, the literature has shown that SM is a rare disorder, with unclear statistics on its incidence, prevalence, and demographics.

### **PRIMARY PREVENTION OF SELECTIVE MUTISM (TIER I)**

We are not aware of any research that has focused on prevention efforts for SM, perhaps because there is no consensus regarding the causes of SM. We believe that the most plausible explanation of the etiology of SM is within a behavioral model. If one considers SM as a learned behavior akin to social phobia, then prevention methods may be directed at minimizing antecedent and consequent events that may lead to SM. Thus, although research is needed on the prevention of SM, we offer potential methods based on behavioral theory, and on Tier II and III interventions.

Most cases of SM are not identified until a child begins attending school, where the child's teacher is usually the first to bring concerns to parents/caregivers and other school personnel (Crundwell, 2006; Leonard & Dow, 1995; Schwartz, et al., 2006; Standart & Couteur, 2003). Primary prevention methods may reduce the frequency of severe cases and may save the school and parents/caregivers cost. Primary prevention can be focused on reducing the number and severity of cases by expanding awareness of SM, training teachers on communication strategies that may be used in the classroom, and minimizing the anxiety associated with entry into the school environment.

Because SM is rare, most school personnel and parent caregivers likely are unaware of the condition. Awareness about internalizing behaviors like SM and anxiety is important because externalizing behaviors, such as attention deficit hyperactivity disorder, often may overshadow the more 'quiet' internalizing disorders. Informing teachers and caregivers about SM and other forms of anxiety in children who are entering school may increase the chances of addressing SM early. Early diagnosis and intervention is important because many cases of SM worsen with time, the disorder often interferes with a child's academic and social development (Crundwell, 2006), and, if not treated, SM may become an accepted part of the child's identity (Omdal, 2008). Caregivers and teachers of children entering school can be informed with a letter addressing the early signs of SM and other anxiety related problems, or can be invited to a training program about early warning signs (Cline & Baldwin, 2004).

Research is lacking on the prevention of anxiety problems in school. Given the relative rarity of SM (and other anxiety related disorders), it may be best to address all types of anxiety in a prevention model. Dadds and Roth (2008) conducted a study to examine the effectiveness of a parent/caregiver-training program toward preventing anxiety associated with school. The study included families from 12 intervention and 13 comparison preschools. In the experimental condition the caregivers were trained on building social competence in their children, and improvement was monitored in first grade through caregiver and teacher reports. The intervention consisted of six sessions across a 12 week period. The sessions were organized around responding to stress, behavior management, cognitive-behavioral intervention for challenging self-talk and attributional styles, and using a problem-solving model to cope with anxiety. The results were mixed, but provided some indication that parent training may be effective toward alleviating some school-based anxiety. Although the results were weak and the study was not directed at SM *per se*, it does provide a potential rough framework for the prevention of anxiety.

In addition to caregiver training, teacher awareness of SM may be beneficial toward prevention of the disorder, or to ameliorating its effects. School psychologists and other support staff can meet with teachers to discuss the characteristics of SM or supply information about the disorder and how to differentiate it from other issues, such as the silent period of English language learners or another disorder, such as autism.

Another potential way to prevent or lessen the occurrence of SM is to train all teachers on oral communication strategies in the classroom. From a prevention perspective, maintaining expectancies for speaking and providing opportunities to respond may be helpful toward facilitating oral communication with all children. For SM, opportunities to respond may include providing situations that allow for speaking, such as avoiding closed yes/no questions, calling on children rather than waiting for them to volunteer, providing a 'wait time' (perhaps 3-5 seconds) for responses, and creating small group classroom activities that include verbal responding. To maintain the expectation for speaking, it also may be beneficial not to reinforce nonverbal responding such as head nodding, pointing, or note writing in lieu of speaking (see Porjes, 1992; Watson & Kramer, 1992). To prevent potential selective mutism, these simple tactics would be used from the very first day of school, rather than waiting for children to begin speaking. It is important, however, to avoid creating excessive anxiety (although a little anxiety may be therapeutic) by pressuring or forcing a child to speak. (These methods also may be adapted by caregivers to use in the home and community before a child's entry into school.)

A third intervention that may reduce the chance of a child developing SM is preparing them for the transition to school, and establishing connections between neighboring preschools, elementary schools, and related service professionals. Research has not been focused on effective methods of preparation for children entering the early school grades. Crundwell (2006) highlighted empathizing with a child's



anxious feelings about entering school. It may be useful to examine schools that provide a visiting day(s) to caregivers and children prior to the beginning of the school year to measure the effects on reducing children's anxiety. Although some preschool children may not develop SM until kindergarten, characteristics related to SM should be acknowledged and monitored (Ullrich, Carroll, Prigot, & Fagen, 2002), and intervention should occur quickly before the problem becomes more entrenched. Although the prevention methods described may prevent SM from occurring or may lessen its severity, research is needed on the effectiveness of prevention strategies.

### **EARLY ONSET INTERVENTION FOR SELECTIVE MUTISM (TIER II)**

Early onset, or Tier II, interventions can focus on helping children who are at-risk for SM. The goal is to minimize the need for individual treatment and resolve issues before they become more serious. Interventions at this level may include anxiety screening, classroom-wide techniques, and group therapy. There have only been a handful of Tier II intervention studies for SM, therefore although empirically little is known, we offer suggestions for Tier II methods based on theory and the available research base.

If school personnel decide to implement a transition program for incoming kindergartners, they have the advantage of identifying in advance who may develop SM or other potential behavioral and academic issues. Key signs of a child at-risk for SM are behaviors related to anxiety, such as amplified separation anxiety, shy behaviors, and slow-to-warm temperament (Bergman, et al., 2002; Ford, et al., 1998). Assessment tools such as the Selective Mutism Questionnaire (SMQ; Letamendi, et al., 2008) can be completed by caregivers to garner information about their child's level of communication and anxiety. Training for caregivers may be focused on teaching them how to cope with their child's anxiety and how to reduce anxiety by altering their own behavior (Sharkey, Nicholas, Barry, Bogley, & Ahern, 2008), such as providing opportunities for response and not reinforcing non-speaking behaviors at home or in the community. Teachers also can be notified of any incoming children at-risk for SM and accordingly prepare their classroom structure to identify SM related behaviors early, and to get a head start on ameliorative classroom based intervention.

Before engaging in more intrusive procedures, support personnel, such as school psychologists, can consult with teachers and caregivers to attempt the implementation of classroom and home-based strategies, including: opportunities to respond, contingency management, shaping, successive approximation, and monitoring. Opportunities to respond in this tier is more involved than Tier I because the method is focused on a specific child(ren). In contingency management, the teacher (and/or caregiver) attempts to positively reinforce all signs of verbal behavior while ignoring nonverbal behavior (Cohan, et al., 2006; Watson & Kramer, 1991; Wulbert, Nyman, Snow, & Owen, 1973). Pairing contingency management with shaping, adjustments can be made on which target behaviors are reinforced. For example, a child who does not exhibit verbal behavior may need lower, more attainable goals, such as participation with a group or any form of verbal responses in the classroom (Giddan, Ross, Sechler, & Becker, 1997).

Drawing from Tier III interventions, the most effective strategies with SM typically follow a gradual, systematic approach to ease the child into speaking, also known as successive approximation (Crundwell, 2006; Omdal, 2008). It is important for teachers and caregivers to be patient and to recognize small steps towards improvement. Lastly, data should be collected on the student's verbal and nonverbal behaviors to assess improvements that have occurred and what strategies were effective (Kearney & Vecchio, 2007). This process also may provide useful data if the child requires additional supports, such as Tier III intervention by the school psychologist.

Group therapy is a third possible intervention that fits within Tier II. This type of therapy allows the school to enhance efficiency by treating a group of children instead of each individual with SM. This mode of treatment appears to be seldom used, probably due to the low number of cases that occur each year. Therefore, group therapy may require the inclusion of students with shyness or other anxiety related problems, or other issues such as limited social skills. Group therapy often is focused on nonverbal and verbal goals (e.g., making eye contact, saying hello when greeted, responding yes or no, initiating conversation) to increase communication for use in the school and community. Bozigar and Hansen (1984) were successful using group therapy to treat three Hispanic-American girls and one African-American

girl (ages 6-9). Sharkey et al. (2008) conducted a study in Ireland using an 8-week group therapy program for five children with SM and their caregivers. The therapy yielded mixed results, with two of the five children no longer meeting the criteria for SM at post-treatment and at a six-month follow-up. This study indicated the need for more research on group therapy, and on the effects of involving caregivers in the therapy process. The research on group therapy has indicated that it may be an effective approach for SM, but the method requires more empirical support.

### **TERTIARY TREATMENT OF SELECTIVE MUTISM (TIER III)**

Children with SM have received a variety of individual treatments, including psychoanalysis, behavior therapy, cognitive-behavioral therapy, psychopharmacology, and various combinations of these therapies, typified as multimethod interventions. Tier III interventions focus on the individual child, are the most common type of interventions for children with SM, and are the most researched and tangible approaches for the disorder.

#### **Psychoanalysis**

Psychodynamic theorists focus on understanding past events that may have influenced a child to stop speaking, and usually search for a conflict between the child and family members (Leonard & Dow, 1995). Psychoanalysts often use strategies such as family therapy and play therapy in an attempt to unfold certain feelings the child and family members might be having (Cohan, et al., 2006). There has been little documented success using psychoanalysis to treat SM, perhaps because often it involves a protracted treatment process (Giddan, et al., 1997). There also has been a lack of generalization for studies that have shown initial success in treating SM in clinical settings (Cline & Baldwin, 2004). Whereas psychoanalysis may be less effective on its own for the treatment of SM, psychoanalytic strategies such as play therapy and family therapy might be useful when combined with behavioral interventions.

#### **Behavioral and Cognitive-Behavioral Therapy**

Behavioral and cognitive-behavioral therapies have been shown to be more successful in treating SM (Beare, Torgerson, & Creviston 2008; Cohan, et al., 2006; Ford, et al, 1998; Giddan, et al., 1997; Kratochwill, 1981; Labbe & Williamson, 1984; Porjes, 1992; Stone, et al., 2002). In a review of the literature on SM from 1990-2005, Cohan et al. (2006) concluded that among all the interventions used to treat SM, behavioral and cognitive-behavioral interventions were the most effective and had the strongest research support. Behavioral and cognitive-behavioral strategies include: contingency management, shaping, social skills training, stimulus fading, systematic desensitization, relaxation training, and self-modeling.

*Contingency management, shaping, and social skills training.* Contingency management techniques involve the use of operant conditioning methods such as positive reinforcement in a strategic way to modify behavior (Giddan, et al., 1997). For example, teachers who implement a token economy are practicing contingency management. Porjes (1992) successfully incorporated contingency management in the treatment of two children with SM. The contingency consisted of receiving a desired reinforcer for verbal behavior. Other studies have been conducted that were successful in treating SM with contingency management methods, typically as part of an intervention package (see Cohan et al., 2006). Whereas contingency management has been shown to be an effective approach which often is recommended for use in the classroom, it may be more effective when paired with other behavioral strategies (Labbe & Williamson, 1984). Shaping is a common strategy to combine with contingency management, and involves small steps of successive approximation that serve as target behaviors to be reinforced. Children with SM may be sensitive to verbal communications and often may need smaller steps that decrease anxiety toward the ultimate goal of speaking to someone (Crundwell, 2006; Omdal, 2008). An additional technique which may be paired with contingency management is social skills training (SST), however, the research is limited. It is difficult to determine how effective SST is individually because it is often combined with other strategies such as contingency management (Cohan, et al., 2006; Fisak, Oliveros, & Ehrenreich., 2008).

*Stimulus fading.* One of the most effective behavioral strategies for children with SM is stimulus fading (Beare, et al., 2008; Kratochwill, 1981; Labbe & Williamson, 1984; Morris & Kratochwill, 1985; Watson & Kramer, 1992; Wulbert, et al., 1973). Stimulus fading is a Tier III intervention because it requires more focus on an individual and outside involvement during the process. Commonly paired with contingency management, stimulus fading is the process of reducing the control of a stimulus on a certain behavior. For a child with SM, the stimulus is usually a parent caregiver or other family member with whom the child is comfortable speaking. The process starts with the child in a controlled environment with that stimulus (Cohan, et al., 2006). Once the child has shown the willingness or ability to speak, a person with whom the child is less comfortable (e.g., the teacher) will gradually be added to the situation. Simultaneously, the comfortable stimulus (e.g., caregiver) will gradually become distant, and “fade” out. Shaping and reinforcement appear to be important in the process of stimulus fading because small steps need to be established and the child may require help to overcome the anxiety associated with each step (Cohan, et al., 2006). Stimulus fading should include classroom and teacher involvement, with the ultimate goal of generalizing speaking beyond the initial fading procedure into the daily school environment and community. Several studies have been conducted to examine the effectiveness of stimulus fading on SM (see Cohan et al., 2006). For example, Wulbert et al. (1973) paired stimulus fading with contingency management to successfully treat a 6-year-old girl with SM. This article stands out due to the specificity offered on the treatment steps of the fading process.

*Systematic desensitization and relaxation therapy.* Cognitive-behavioral therapy (CBT) has been shown to be an effective approach for increasing speech in children with SM (Cohan, et al., 2006; Grover, Hughes, Bergman, & Kingery, 2006; Schwartz, et al., 2006). CBT strategies often are paired with stimulus fading and contingency management (Cohan, et al., 2006). Systematic desensitization is the process of gradually exposing a person to a hierarchy of anxiety-provoking stimuli, with the goal of reducing the person’s level of anxiety in each situation. This technique often is paired with relaxation training to manage the anxiety symptoms and improve outcomes. A hierarchy for a child with SM may include different levels of speaking situations, such as starting from whispering, to speaking in a small group, and ultimately to speaking audibly in front of an entire class. Suveg, Comer, Furr, and Kendall (2006) treated an 8-year-old girl identified with SM, social phobia, generalized anxiety disorder, and cognitive delays by training her in relaxation exercises, and then exposing her to a nine-step hierarchy that dealt with conversing with others (e.g., calling a friend on a phone or having a conversation with an unfamiliar adult). Relaxation exercises included writing assignments about situations in which she stated she was anxious, and conducting progressive muscle relaxation in anticipation of the anxiety provoking situation. The child was able to reach the higher steps in her hierarchy before the end of treatment. Overall, the data have indicated that systematic desensitization and relaxation training can be effective in the treatment of SM.

*Self-modeling.* Self-modeling involves using a video or audio device that records the child speaking, and then inserting the recording into an environment in which the child typically does not speak (Cohan, et al., 2006). The child is exposed to the recording with the goal of increasing their familiarity with the anxiety provoking stimulus (i.e., the classroom environs) which may result in more comfort that allows them to speak. Pigott and Gonzales (1987) used video self-modeling with a child who only spoke when his mother or brother were present in the classroom. Therapists in the study made a videotape of the classroom when the child’s mother and brother were present, and edited the video to show the child answering direct questions and other tasks without his mother or brother present. The student watched the short videos before school for two weeks and received reinforcement for verbal behaviors in class. The intervention resulted in an overall increase in answering and asking questions in class. In some cases, video self-modeling has influenced children with SM to initiate conversations and speak freely within the classroom (Kehle, Madaus, Baratta, & Bray, 1998; Kehle & Owen, 1990). A related method may be to use virtual reality methods to place the child in a computer generated scenario. Although research has yet to be conducted, this technique may have the advantage of increasing child involvement due to the novelty of the method.



## Psychopharmacological Therapy

Research findings supporting the link between SM and anxiety have influenced the use of psychopharmacological treatment (Carlson, Mitchell, & Segool, 2008; Leonard & Dow, 1995). For example, Golwyn and Weinstock (1990) conducted a study on the use of phenelzine with a 7-year-old girl with SM (phenelzine is a monoamine oxidase inhibitor (MAOI) that has been used for the treatment of depression and anxiety disorders). After 16 weeks, the child was speaking freely in school and in the community. The medication was gradually decreased and a five-month follow-up showed that the student remained talkative without the medication.

Carlson, Kratochwill, and Johnston (1994) surveyed 308 psychiatrists on how they might treat a child with SM. Of the sample, 199 reported having treated a child with SM, and 36% reported that they prescribed medication. Interestingly, only 14% of the psychiatrists who had treated SM reported that therapy that included medication was the most effective method of treatment. The method with the highest endorsement rate was psychotherapy (24%), followed by a combination of psychotherapy and family therapy (17%), and behavior therapy (14%).

It is the school psychologist's role to consult with the a child's caregivers and to collaborate on a decision whether a child should be referred to a physician, and to be aware that choosing a more invasive intervention should be done with caution (Schwartz et al., 2006). Phenelzine has produced undesirable side effects and is now rarely considered for treatment (Cline & Baldwin, 2004). Whereas other psychotherapeutic drugs such as selective serotonin reuptake inhibitors (SSRIs) have been shown in some cases to be effective in reducing symptoms of SM (see Carlson, et al., 2008 for a review of research on pharmacotherapy for SM), medication probably is best used as a last resort because of the potential side effects, and the unknown effects of psychotropic medication on brain development. However, medications may be required for more intractable or long-term cases or for children who also exhibit extreme depression or other anxiety disorders (Carlson, et al. 2008).

## Multimethod Treatment

All the treatments described in this article have some level of empirical support for their use, which makes it confusing to know which treatment is the best to implement. However, a trend appears among most of these treatment studies: a combination of multiple strategies can be an effective way to treat SM. For example, stimulus fading often has been combined with contingency management, shaping, and relaxation training. Kehle et al. (1998) implemented a treatment with three students using combinations of self-modeling, reinforcement, stimulus fading, shaping, and medication. Each case showed improvement toward the end of treatment. Similarly, psychodynamic strategies such as play therapy and family therapy have been combined with behavioral strategies (Cline & Baldwin, 2004). The literature indicates that the successful treatment of SM is typified by the use of multiple methods of intervention (Astendig, 1998; Cohan, et al. 2006).

## CONCLUSION

As an advocate for children, school psychologists can work with teachers, parent caregivers, speech pathologists, and other support staff toward helping children who may develop or have selective mutism. School psychologists also are responsible for updating their knowledge on the research regarding etiology and intervention strategies for SM.

A review of the literature on SM revealed that more research is needed in all the areas presented in this article: incidence, prevalence, demographics, primary prevention, early onset interventions, and tertiary interventions. Although SM may be a rare and complex disorder, many treatments have been shown to be successful in treating SM. A growing body of research has supported Tier III interventions, with the preponderance of research supporting behavioral and cognitive-behavioral therapies. More research particularly is needed to strengthen the theoretical, research, and practice base of Tier I and Tier II interventions. Research with children showing symptoms of anxiety and SM supports the possibility that primary and secondary interventions, such as caregiver and teacher training, kindergarten preparation,

anxiety screening, classroom intervention, and group therapy may be successful in schools. Based on the available theoretical and research base, we believe that Tier I and Tier II intervention may result in the prevention and amelioration of many occurrences of selective mutism.

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